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POPULATION AGEING IN SCOTLAND: TIME FOR A RE-THINK?

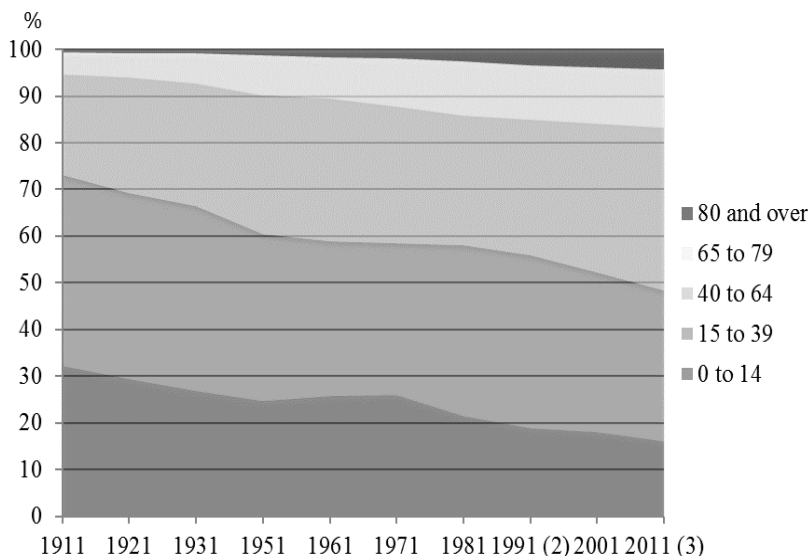
Jeroen Spijker and John MacInnes

INTRODUCTION

The first results from the 2011 Census show that, for the first time ever, there were more people aged 65 or over in Scotland than there were children aged under 15. A century ago people aged 65 or over represented about one in twenty of the population. Today their share is around one in six. Indeed the share of the population aged 80 or over is not far off the proportion represented by those aged 65 a century ago (see Figure 1). The share of the very oldest has also expanded, albeit from a small base, so that the number of men aged over 90 has risen by a half over the last decade, while the number of women aged 90+ has expanded more modestly, by just over one in six. The improvement for women has been less, simply because their slightly greater life expectancy meant that there were already more women living into their nineties in Scotland before the turn of this century.

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Figure 1
Scotland 1911-2011 Resident population on census day by age group



Source: National Records of Scotland '2011 Census in Scotland: Population Estimates for Scotland- Release 1A, December 2012'. Available at <http://www.scotlandscensus.gov.uk/documents/censusresults/release1a/rellasb.pdf>

This growth in the number of older people has created concern about 'population ageing': the process whereby low fertility and decreasing mortality give rise to changes in the age structure of the population within which older people form an ever increasing proportion of the total (see Figures 1 and 2). Given the projected increase in the number and proportion of elderly in the UK (for Scotland, see National Records of Scotland, 2011), these concerns have been expressed by commentators, the UK and Scottish governments as well as social scientists. While the press has been inclined to spread consternation (e.g. **The Economist**, 2004; **Daily Record**, 2012; **The Herald** 2012; 2013a; 2013b), governments have generally been more cautious, although perhaps less

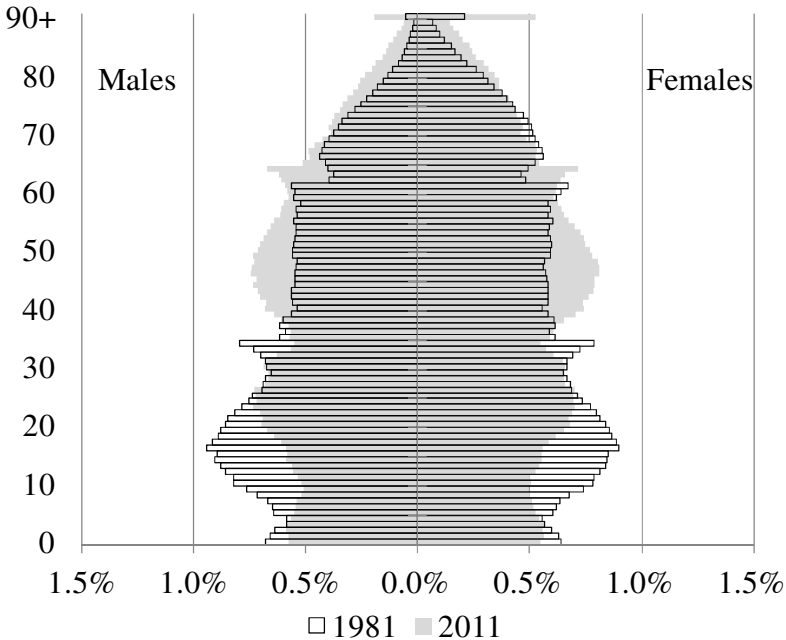
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so over pensions (e.g. The Scottish Government Finance Committee, Burnside, 2012; House of Lords Select Committee on Public Service and Demographic Change 2013; Department of Work and Pensions, 2006). Some academic researchers have viewed the effects of population ageing as a mixture of positive and negative (Shaw, 2002; Raeside and Khan, 2008) while others have been more pessimistic. Wright (2002) even predicted a considerable reduction in overall living standards if the challenges of population ageing were not met. In summary, popular concerns regarding the process of population ageing exist for at least six reasons (see also Shaw, 2002):

1. for every productive worker in employment there will be a rising number of older dependent citizens;
2. as this ratio increases so will the cost of social insurance and welfare systems to working taxpayers increase;
3. the growing elderly population will increase the health and social care systems costs;
4. as the working population ages, there is the risk that less 'new blood' will bring with it less innovation, experimentation, risk-taking and general dynamism;
5. the political system will shift towards the representation of the interests of the old at their expense of the young;
6. all these trends appear irreversible since mortality may be expected to continue to fall.

Immigration is a purely temporary solution, as immigrants themselves will grow older. Thus Coleman (2002) and Holzmann (2005) have shown that halting changes in the population age structure as life expectancy increases soon require levels of immigration many times the size of the original population of a country. Although demographers have less often noted that much the same can be said for fertility, David Attenborough (2011) recently pointed out, quite correctly, that boosting fertility in a Canute-like attempt to avoid population ageing would be like a giant Ponzi scheme: it could work only if fertility could be continually accelerated to offset the rising number of older people that higher fertility would itself eventually produce. Thus many states are now considering such measures as rises in the age at which people can retire from work, or changes in pensions and social security arrangements in order to address the challenges of population ageing.

Figure 2
Age structure of the Scottish population. 1981 vs. 2011

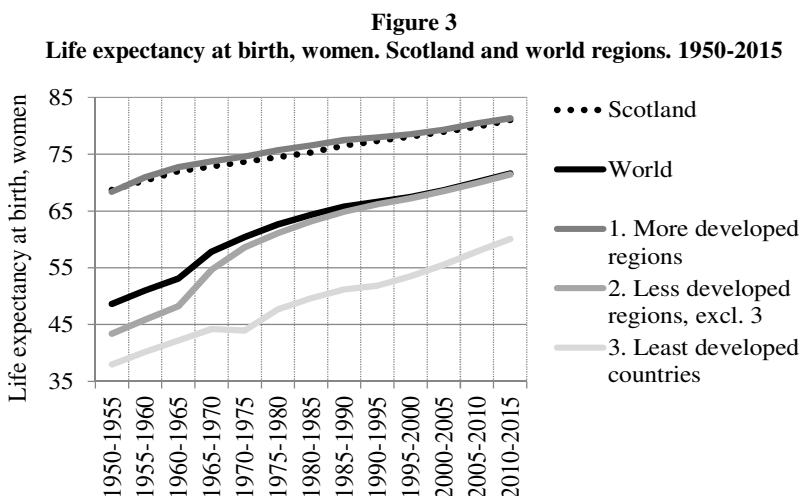


Source: GROS (2012). *Mid-year Population Estimates; Scotland by quinary age and sex: 1911 to 2011*. <http://www.gro-scotland.gov.uk/statistics/theme/population/estimates/mid-year/time-series.html>.

However it seems to us that these ‘solutions’ may address a problem that does not exist in the terms routinely stated. The trouble begins with the metaphor itself and the loose thinking it seems to encourage. Unlike persons, populations neither ‘age’ nor die. What *does* change is the age structure of the population, as fertility and mortality change. That is why populations, as measured by their mean or median ages, can get ‘younger’ as well as ‘older’: something which persons, alas, can never do. Indeed, as we shall see, it can sometimes make most sense to see populations as *simultaneously* getting older and more youthful.

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A few moments' reflection should lead us to ponder how it can be that what has been perhaps the greatest human achievement of the last century – the dramatic reduction of mortality across all ages, from infant to 'oldest-old' – has come to be seen as a problem! People in developing countries can now expect to live longer than those in the affluent West did as recently as the 1950s (Figure 3). Over the course of the twentieth century mean world life expectancy probably doubled. Population ageing is ultimately driven by much longer lives: it is a good, perhaps the best, thing.



Source: World and macro regions: UNDESA Population Division (2013). *World Population Prospects: The 2012 Revision*. <http://esa.un.org/wpp/>. Scotland until 1980: General Register Office for Scotland (2012). *Scottish Interim Life Tables. Table 1. Expectation of life, by sex and selected age, Scotland, 1861 to 2011*. <http://www.gro-scotland.gov.uk/>. Scotland After 1980: Office for National Statistics (2012). *Period and cohort life expectancy tables, 2010-based. Table A1: 2010-based period expectation of life, 1981-2060, Principal Projection, Scotland*. <http://www.ons.gov.uk/ons/publications/re-reference-tables.html?edition=tcn%3A77-227587>. Data points for Scotland are 1950-2, 1960-2, 1970-2, 1977 and every subsequent 5 years.

THE JANUS FACE OF POPULATION AGEING

It is well known that rising life expectancy (or what amounts to the same thing, falling mortality) changes the age structure of populations. A useful simple

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measure of this is the median age of population members. The median age of a population is obtained by ranking all of its members by their age and selecting the age of the middle person in the ranking. Half of the population will be younger and half will be older. Using this measure the median age of the Scottish population in 1950 was 32.6. The impact of the baby boom largely offset improvements to life expectancy, so that for thirty years, the median age of the Scottish population changed little. However from around 1980 onwards, median age increased rapidly to reach 41 years by 2009, as shown in the first column of Table 1.

Table 1
Scotland: Median age and life expectancy at median age. 1950 – 2009

	Median Age	Life expectancy at Median Age	Prospective Median Age*
1950	32.6	38.6	32.6
1955	33.2	38.8	32.3
1960	33.4	39.1	32.0
1965	33.2	39.5	31.5
1970	32.9	40.1	30.9
1975	32.6	41.0	29.9
1980	33.2	41.0	30.0
1985	34.4	40.4	30.6
1990	35.3	40.5	30.5
1995	36.4	40.3	30.7
2000	38.1	39.7	31.4
2005	39.9	39.0	32.1
2009	41.1	39.1	32.0

Source: Human Mortality Database. www.mortality.org. Own calculations.

*Note: *PMA is the age of a person in year x who has the same remaining life expectancy as a person at the median age in the year under consideration (i.e. the standard year), which in this example is 1950.*

Crucially, however, a second aspect of population age structure is changed by rising life expectancy. This aspect has not received as much attention, perhaps because it is technically more difficult to measure. It is the change in the

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structure of the population in terms of its members' years left to live. Longer lives mean that the same age in chronological years comes to be associated with longer remaining life expectancy. Many behaviours (including e.g. propensity to save, likelihood of consuming health services) and attitudes may be more strongly linked to remaining life expectancy than to age¹. As mortality falls, it affects not only the structure of the years of life *already lived* by members of a population (what we've just looked at), but also the expected number of *years left* to live at a particular age (called prospective age by Sanderson and Scherbov, 2007). One can think of falls in mortality, especially at older ages, as the slowing down of senescence, or of biological ageing. If we use chronological age, we tend to imagine that people of the same age in different historical periods would behave in a similar ways. However, it would be wrong to assume that a 65-year-old person in 1909 was just as 'old' as a 65-year-old person in 2009 even though both have lived the same number of years. This is because the two are unlikely to have aged at the same rate (Lutz et al. 2008): a 65-year-old today has on average more remaining years of life than their counterparts of earlier times. For example, in 1909 a 65 year old male still had on average 10,7 years to live and a female 12,0. In 2009 this had increased to 16,7 and 19,3 years, respectively (www.mortality.org).

This increase in life expectancy at age 65 of about 60% has shifted the meaning of given calendar ages substantially. As Table 2 shows, today's 68 year-old male is literally the new 60 year-old given the identical remaining 15 years of life expectancy that 60 year olds had in 1976 (for women 71 year olds are the new 66 year olds). Not only are elderly living longer, they are also on average healthier (Lutz and Scherbov, 2005). We now live in an age of 'active ageing' with increasing amount of leisure (e.g. travelling, physical exercise) and non-

¹ Here we refer to the average life expectancy of a population, not the life expectancy of individuals as the Human Mortality Database does not dispose of such information. Moreover, contrary to lived years, the exact date of one's own death is unknown which would make certain (e.g. consumer) behaviour more likely to be influenced by population average life expectancy. Indeed, research on older individuals' subjective probabilities of survival has been shown to be positively correlated with observed probabilities, despite cross-country and socioeconomic differences (Delavande and Rohwedder, 2011).

leisure (e.g. taking care of grandchildren while their own children work) activities being done by elderly citizens².

Table 2
Scotland: Ages at which life expectancy equals 15 years

Year	Remaining years of life expectancy	Approximately at age	
		Men	Women
1909	15	57	60
1976	15	60	66
2009	15	68	71

Source: Human Mortality Database. www.mortality.org. Own calculations.

Sanderson and Scherbov (2005, 2007) have thus suggested examining the *prospective median ages* (PMA) of populations and their members. ‘Life expectancy at the median age is the expected number of years to be lived by a person at the median age. It is also the median remaining life expectancy in the population, with half of the people being at ages with lower remaining life expectancies and half at ages with higher ones.’ (2005: 811).

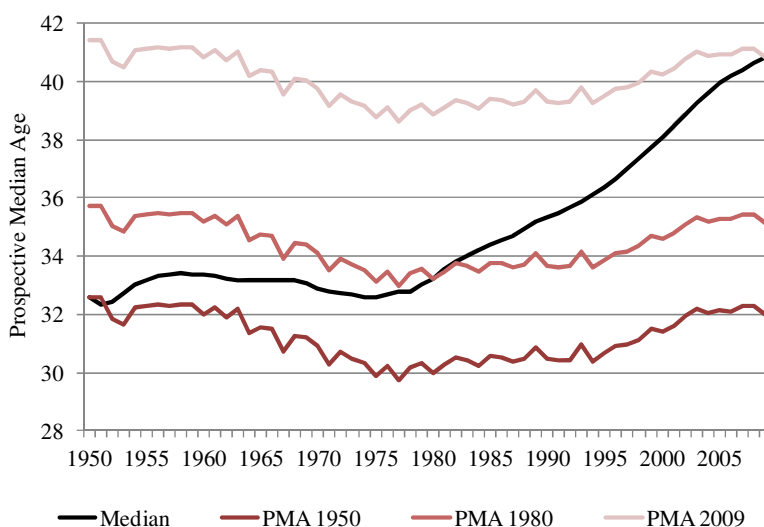
PMA are especially useful because they give a better guide to changes in society directly linked to the ageing of individuals. A well-known example is the concentration of medical expenditure in the final years of a person’s life. Trends in such expenditure in a population will be captured better by shifts in the *prospective* median age. They may not be captured at all by shifts in the median age, or by counting what proportion of the population lies over a given calendar age threshold, because this fails to take account, paradoxically, of the

² *In the case of Great Britain, data show that both life expectancy and disability free life expectancy (DFLE), taken as life expectancy free from limiting long-standing illness, at age 65, have both increased since the mid-1970s. However, while the pattern of the former has been almost linear, the trend in DFLE was less so. Faster improvements since about 2000, however, have meant that in 2008-10 DFLE was at 59% and 55% of male life expectancy at age 65 for men and women, respectively, compared to 55% and 52% in 1976 (own calculations based on figures published in Bebbington (1988) and ONS (2004; 2012)).*

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effect of longer life expectancy on behaviour. For example it is possible for rises in life expectancy to keep pace with or even outstrip rises in the median age of a population, such that *both* the median age *and* the prospective median age may rise: the population may be ‘older’ in the traditional sense of a having a higher average age, but thanks to gains in life expectancy, it will not have ‘aged’ at all, or may even have become ‘younger’ in terms of average years remaining till death. This is not only possible, it is in fact an excellent description of what happened in Scotland between the late 1950s and the late 1970s (see Table 1 and Figure 4).

Figure 4
Median Age vs. Prospective Median Age. Scotland 1950-2009.



Source: Human Mortality Database. www.mortality.org. Own calculations.

Note: PMA 1950, etc. Year refers to Standard Year.

In order to examine this process, it becomes convenient to standardize the median age using the life tables for a country in a given year (estimates differ little for period and cohort tables, enabling the former to be used). The

prospective median age proposed by Sanderson and Scherbov (2007) adjusts historical median ages to the age they would become if the remaining life expectancy at that age was that of the median age in the standard year. Such standardization allows us to compare calendar ages in different periods from the perspective of years *left to live*, rather than years already lived. The Prospective Median Age of a population in year X (called the index year), is the age of a person in index year X, who has the same remaining life expectancy as a person of the median age in another year chosen as the standard year. The PMA measure thus adjusts for changes in life expectancy over time.

Both Table 1 and Figure 4 show the results for Scotland. If we consider 1950 as the standard year then by definition both the median age and the prospective median age of the Scottish population are the same in this year (32.6 years), whereby life expectancy for someone of median age in 1950 was 38.6 years. Over the three decades, the median age hardly changed, although life expectancy at median age did. As a result, the prospective median age compared to 1950 declined. As we know, the median age increased sharply after 1980 to 40,8 years in 2009. At the same time, life expectancy at the annually higher median ages only declined slowly, with the net effect that the PMA increased to levels similar to 1950 (32.0 vs. 32.6 years). Although over the period of almost six decades the median age of the Scottish population increased by 8.5 years, the remaining life expectancy of persons of median age in both years is similar.

As Figure 4 shows, the same trends are observed if different standard years are used, although the absolute level is different (i.e. as the MA is different for that year). For instance, if using 1980 as the standard year both the MA and PMA would equal 33.2 years in that year and the PMA 35.7 years in 1950 and 35.1 in 2009, i.e. also 0.6 years lower in 2009 than in 1950 just as was the case when 1950 (or any other year) was used as the standard year.

Because of the complex character of the formula used to produce prospective median ages, some readers may well suspect that we have employed some statistical sleight of hand to produce results that are not only counter-intuitive but run against the grain of existing comment. On the contrary, what we have suggested here is a way of measuring population ageing that, unlike the standard approach, is not blind to its inherently contradictory nature. We have more older people because people are living longer. Because they are living longer, their life expectancies are greater and with that the health, behaviour and attitudes of people of the same chronological age come to change over

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time. Using the earlier example, a Scot of the median age 41 in 2009 had pretty much the same life expectancy as that of someone *nine years* younger, 32, in 1950.

As noted above, the median age in Scotland rose rapidly from 33 to 41 years between 1979 and 2009. From the one-sided perspective of calendar ages, this appears to be rapid population ageing with dramatic social consequences. However, if we also consider prospective median age, using the concept of standardizing for life expectancies in different years, we find a quite different story. In terms of standardized remaining years of life the change in median age has been barely two years. Moreover, this period has been an exceptional one, comprising as it does the years of adjustment after the baby boom, when high fertility kept the median age of the Scottish population down, offsetting all falls in mortality. Thus if we take a longer time period – sixty years rather than thirty – we find that in terms of expected years left to live, *the Scottish population in 2009 was as ‘young’ as it was in 1950.*

THE CHALLENGES OF POPULATION AGEING RECONSIDERED

However beneficial the longer lifespans that population ageing brings might be, they may nevertheless pose new challenges and problems for society. Here too we are unimpressed by much of the arguments and evidence cited briefly above. Let us take the six points we set out in our introduction in reverse order.

Our consideration of prospective ages takes care of the last point about the inevitability of population ageing. Insofar as the reduction of mortality also entails what might be called the ‘juvenation’ of the population at any given age, it is not clear that longer lives necessarily are or will be ‘older’ ones.

The fifth point, about the shift of political interests towards the older population has been true since the advent of universal suffrage. Alva Myrdal, the intellectual mother of the Scandinavian welfare state, pointed it out in her 1941 book *Nation and Family*. Politics has always displayed a bias towards the interests of the old, for the simple reason that the majority of the electorate has still to reach old age, while the entire electorate has already been young. Thus in most democracies more attention is paid to elder than child poverty. The former tend to be seen as worthy recipients who have earned their right to state support or a light taxation touch. Witness the recent debate over death duties. Poor children, on the contrary, are too often seen as the unfortunate product of feckless parents. However, population ageing in itself need not worsen this

bias. It does so only to the extent that voters are encouraged to see themselves, and identify their interests with, 'the old' as defined by fixed calendar age thresholds.

If we accept these arguments, then so too does the force of the fourth claim for the problematic effects of population ageing fail. Metaphors of 'new blood', and the association of dynamism with youthful vigour, are fine for literature but find scant support in rigorous empirical investigation, since 'new blood' may also be associated with relative ignorance, naivety and lack of either experience, diligence or loyalty. One could just as well reverse the argument about age and productivity. Think of the vast burden facing education and employment systems in the 1960s as they trained the army of baby-boom children. One might imagine that longer working lives allow for the greater accumulation of human and social capital. However, if people choose to reduce the proportion of their lives devoted to employment (as they have been doing in various ways since the time of the industrial revolution onwards) it is at least incumbent on the prophets of population ageing doom to explain why this should have become a qualitatively different problem now. Such choices have been made possible by the substantial and steady trend rise in standards of living ultimately driven by technological progress. Where is the evidence that this is about to stop? On the contrary, we seem to be enjoying successive waves of innovation driven by the relentless increase in microchip processing power.

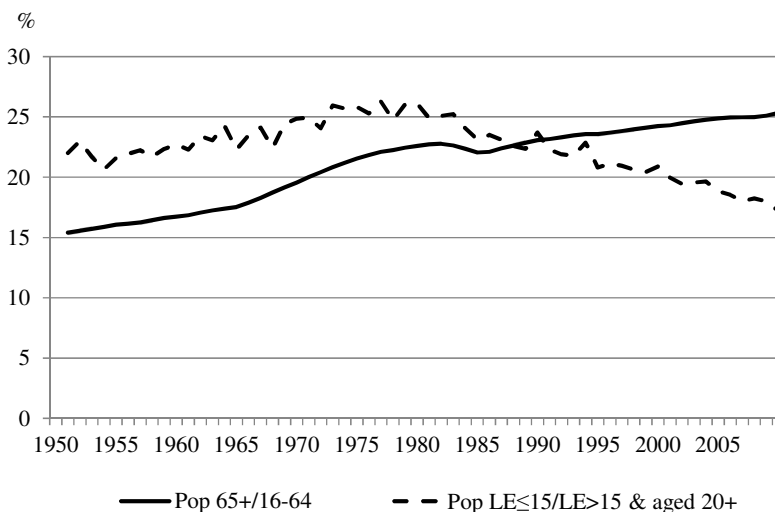
The cost of health and social care systems is certainly rising, as advocates of point 3 emphasize. However, the increasing cost of health and social care systems is in part yet another aspect of continued economic and technological progress which creates new possibilities for medical intervention or social protection. Moreover, medical and social care are examples of 'technologically non-progressive' activities (Baumol 1967), that also rely heavily on personal care work which cannot easily be automated. One might therefore expect a trend rise in their relative cost as technological innovation elsewhere in the economy raises the general productivity of labour and rewards to it, even if the level and nature of provision of health and social care services did not change at all. What is less clear is whether the changing age structure of the population has a significant role to play in this process. People are living longer in part because they are healthier. One might think in terms of the slowing down of biological ageing or senescence. Several studies have suggested expenditure on health and social care continues to be concentrated in the final years of life (e.g. Seshamani & Gray, 2004; Wong et al., 2011; Zweifel et al., 1999). As life expectancy increases this expenditure is postponed to higher ages. Old age

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should therefore not be a static but a dynamic concept and be measured as such. For instance, Sanderson and Scherbov (2008: 7) define old age as beginning when people have a remaining life expectancy of 15 or fewer years. As Table 2 showed earlier, the age at which men and women today have a life expectancy of 15 years is 68 for men and 71 for women.

Old age dependency ratios have usually been calculated by simply dividing the number of people above a certain chronological age (such as the state retirement age) by the number who are currently of working age (typically taken as 16 to 64 for men). However this method of calculating dependency ratios gives us little sense of the impact of population ageing on the real balance of dependency, given that it focuses exclusively on the first only of the two contradictory effects of population ageing – the production of more older people – but older people who are themselves ‘younger’ than their peers of earlier years. This is shown in Figure 5. The dashed line in this graph uses Sanderson and Scherbov’s definition to express the proportion of the Scottish population who have less than 15 years of remaining life expectancy as a proportion of all the Scottish population who have higher life expectancies but are aged 20 or over. This gives us an alternative measure of the changing relative size of the potentially active and potentially old age dependent population. It takes no account of changing retirement ages, and takes 20 as a lower age limit for the active population, in order to reflect the rise in age at entry to the labour market over the last few decades. The solid line traces the classic ‘elderly dependency ratio’ calculated on the size of the population aged 65+ relative to the ‘working age’ population of 16-64. The contrast in the evolution of the two measures could not be clearer. The first measure peaked in the late 1970s. Since then improvements in life expectancy have meant that the population with more than 15 years left to live has grown faster than those with less than 15 years. Indeed the size of the latter group as a proportion of the former has fallen from around one quarter to around one sixth. Conversely the classic elderly dependency ratio has steadily increased over the same period. Using a static age cut off point such as 65 in the planning of public expenditure on social resources, particularly related to health, makes little sense as population health at any given age improves over time.

Figure 5
Standard Population Dependency Ratio vs. Life Expectancy Adjusted Population Dependency Ratio, 1950-2009



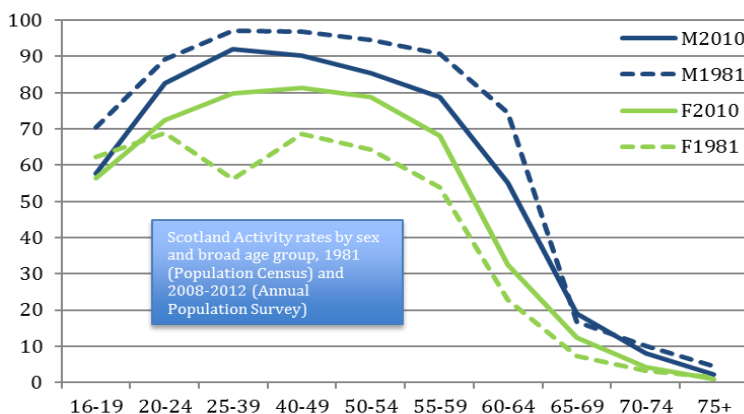
Source: Human Mortality Database. www.mortality.org. Own calculations.

This leaves us with the first and perhaps most important argument: the decline in the number of productive workers compared to dependent citizens. This, surely, must be inevitable? It is no such thing. First, the size of the employed workforce is driven by many factors other than age: its relationship to the population age structure is rather dynamic. The employment rate of women and especially mothers increased dramatically over the last 50 years as systematic gender discrimination was dismantled in the workplace and the ‘male breadwinner’ employment system weakened (Figure 6). The ratio of productive workers to dependent citizens was moved upwards by the reduction in the number of young people in the population as fertility declined after the baby boom. However it was also driven down by the shortening of workers’ labour market careers. The skill demands of a high technology economy have increased the age of entry to the labour market. By the end of the 20th century young people were more likely to enter it in their early or mid-20s than at 16 or

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17. At the same time less than one half of men and women were waiting until the state retirement age to leave the labour market. More did so earlier either because they could afford to do so, or because they no longer saw any realistic prospect of obtaining employment.

Figure 6
Economic Activity rates by gender and age group, Scotland 1981 and 2010*



Source: Scotland Census 1981; Annual Population Survey (APS) July 2008 to June 2012.

* The average of four calendar years has been taken for the APS measurements, to give estimates for older years less influenced by sample fluctuation.

Again, it is worth considering general economic and technological progress. Affluence and technological innovation ought surely to lead to a gradual reduction in the proportion of one's time over the life course dedicated to employment. The 20th century saw the rise of the eight-hour day and the five-day week and a substantial reduction in the working year (through increased holiday entitlement). For men it saw a reduction in the length of a labour market career (as age at entry increased and age at exit declined) while for women it increased as women ceased to exit the labour market after childbirth or marriage. A good indication of this is trends in annual working hours, since these not only take account of changes in the working day or week, but also changes in the length and number of holidays. Separate figures for Scotland are

not available, but OECD data for the UK show that, between 1870 and 1998, annual working hours per person employed fell by just over one half, from just under 3,000 hours to just under 1,500 hours per year. Over the same period productivity per person hour increased almost eleven fold (Maddison, 2006: 347-9) In the future we could expect productivity gains to produce a continued reduction in the proportion of years in a person's life devoted to employment in much the same way that they have produced a steady reduction in the amount of time within each year workers spend in employment. All this is progress.

Dependency ratios are often seen as a negative thing: the higher the ratio of dependents to productive workers, the greater the problems for an economy. The term dependency ratio also encourages us to imagine that all people in employment are 'productive' while those not working are dependent upon them. It is far from clear that either proposition is true. The daily and generational reproduction of the employed labour force is almost entirely 'dependent' upon the non-employed. Market society has hitherto failed to professionalize the family. Those in education and training may be counted as 'dependent', but the economy is thoroughly dependent on the knowledge and expertise they thus acquire. It also needs them, of course, as consumers. Here too the position of the young and old are very different, since the old, on average, may be income poor, but are often asset rich. Thus the 'grey pound' has become steadily more important in modern economies.

Possibly the worst way to calculate dependency ratios, given these factors, is the current standard practice: divide the number of people who have reached the state pension age (65 for men, between 60 and 62 for women) by those of 'working age'. This takes no account of the changing proportion of people of 'working age' who are not in employment, nor, conversely, of the small but significant proportion of people who work well beyond the state pension age. The misleading results of doing so are indicated in Table 3 and Figure 7, which disaggregate the productive and dependents by sex and age for Scotland for the period 2008-2012. Just under half the total population, or 2.47 million people are 'productive' in the sense of being employed or self employed. Children under 16 number just over 0.9 million. The 1.8 million other dependents are divided almost equally between those of working age and those who are older. We draw two conclusions from this data. The first is that old age is a poor guide to dependency when one half of adult dependents are below the state pension age: it makes more sense to calculate ratios based directly on employment status. The second is that if there is concern about dependency ratios it ought to focus on all adults, rather than the elderly. Fuller employment,

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regardless of workers' ages, is the issue, not the age at which people choose to retire.

Table 3
Employment and Dependence by sex and age, Scotland 2008-12 (000s)

Age	Working Men	Working Women	Dependent Men	Dependent Women
0-15	0	0	465	444
16-54	1053	1000	298	399
55-59	118	109	41	57
60-64	82	53	74	113
65-69	22	16	99	119
70-74	8	5	90	112
75+	3	2	143	224
All	1286	1185	1209	1467

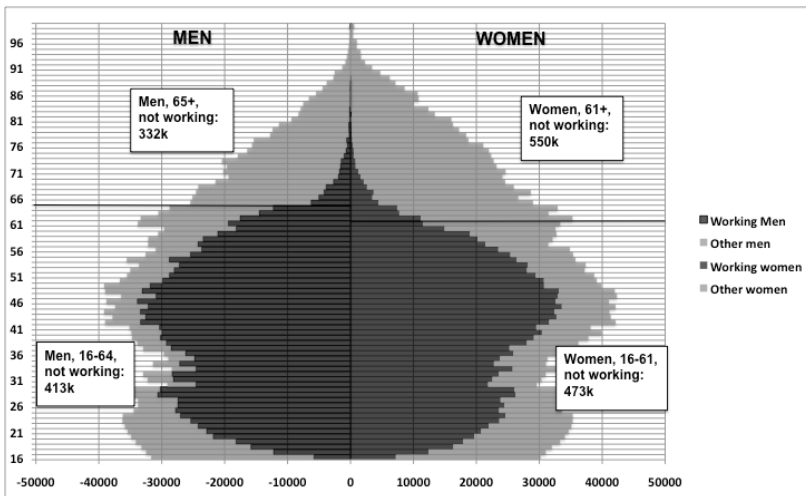
Source: Annual Population Survey 2008-12 (annual average)

This does not mean that population ageing poses no problems for the future in Scotland. Figure 2 shows that the population bulge associated with the baby boomers, who are now in their late forties or early fifties, will start to inflate the numbers of dependent elderly relative to the rest of the population in around twenty years time. However, we need to keep in mind that as with any birth cohort, the distribution of life expectancies and age related disabilities for these boomers dramatically dampens the effect upon health and social care systems. Some have already met precocious deaths, others will live to advanced years with little impairment.

Just as in the past, care for older people will require resources to ensure that in both rural and urban areas there is more suitable retirement housing (Shelter, 2012) and more health, social and other support services that are better adapted to their needs (Burnside, 2012; The Select Committee on Public Service and Demographic Change, 2013). Particularly the (less accessible) rural areas need careful planning given their higher proportion of elderly and a much lower population density. Already older rural people find a wide range of services

less convenient than their urban counterparts, and the question of rural services for dementia also appears to be a neglected theme (Blackstock et al. 2006). Ageing also affects certain subpopulations differently: for instance elderly who do not live with a partner or near offspring are more likely to rely on institutions for care, while the wealthy are more able to finance their own care. It has not been our aim here to explore the distribution of mortality by partnership status, social class, residential area or other characteristics. These are vital questions, but we leave them for future research. Our aim here has rather been to establish a clear idea of the volume of population ageing and how it might best be measured.

Figure 7
Employment and Dependence by sex and age, Scotland 2008-12



Source: Annual Population Survey 2008-12 (annual average)

The argument that population ageing as such must pose a fiscal challenge to the Scottish government that it will struggle to answer lacks empirical credibility as both our employment and demographic data suggest. Like Shaw (2008) we see no reason why the lengthening lifespans produced by ‘population ageing’

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pose any challenge to the economy of the kind that routine productivity growth has met in the past and will continue to meet in the future. Productivity growth will continue to outstrip the gradual increase in the proportion of the population who have finished their working lives. We suspect that the age at which they choose to do so in the future will continue to be driven by factors other than the state pension age, just as the age at which youngsters enter the labour force has been determined less by changes in school leaving age than by the educational qualifications demanded by a high technology economy. While few could argue with the right of older people to continue working if that is their choice, constraining that choice by raising the state pension age seems to us to have more to do with attempts to downsize the welfare state than address a proven demographic crisis.

CONCLUSIONS

From our analysis we draw three conclusions. We reject claims about the sustainability of current pension, welfare, social or healthcare arrangements which are based on examining misleading indicators such as the proportion of the population aged 65+ or dependency ratios calculated using static population age structures. It is better to examining real trends in employment or other behaviour. Such claims are more likely to spring from a desire to restrict the volume of state activity than a desire to truly understand the dynamics of population aging.

Second, social scientists and social commentators have a responsibility to choose the metaphors they use with care. The overwhelmingly negative ones chosen to describe the global, continuing fall in mortality have facilitated the perception that the latter has been chiefly a threat to existing social arrangements rather than a fundamental achievement of social progress.

Finally, too little attention has been given by economists, sociologists, demographers and others to the implications of rapidly increasing life expectancy for the relationship between age and behaviour. In this case at least, vernacular slang, with its talk of ‘50 is the new 40’, has perhaps been some way ahead of the ‘experts’.

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